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INTRODUCTION

REVIEW OF LITERATURE

NEED/IMPORTANCE OF THE STUDY

STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

SCOPE FOR FURTHER RESEARCH

ACKNOWLEDGMENTS

REFERENCES

APPENDIX/ANNEXURE

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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

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- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

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- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

FINANCIAL LEVERAGE AND IT'S IMPACT ON COST OF CAPITAL AND CAPITAL STRUCTURE

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ABSTRACT

Cost of financing increases as a firm continue to lever itself. Though Cost of Debt as well as overall cost of financing decreases with higher leverage initially but after a certain point of time even they begin to escalate as suppliers of funds starts demanding higher return for increased risk. But Cost of Equity increases as soon as firm becomes more levered. By taking IT and Infrastructure sectors, this paper seeks to establish these theoretical concepts. As the research is conducted at a point of time, it doesn't take Cost of Debt over the years into consideration. But still this research leads to significant conclusion. Cost of financing as well as Cost of Debt is negatively correlated with financial leverage while Cost of Equity is positively correlated. The research takes 20 companies into consideration. Further research can be carried out on this aspect. Also, through the use of Modigilani Miller approach on capital structure, it also seeks to find undervalued and overvalued firms in the IT and Infrastructure sector.

KEYWORDS

Cost of Capital, Financial leverage, valuation of IT and Infra structure firms.

INTRODUCTION

Capital requirement poses as one of the most crucial challenges to the financial manager. Cost of capital refers to the minimum amount of return that a company must earn from its operations for it to breakeven. So, if a firm is earning more than it's cost of capital it is a profit making venture. The required rate of return depends upon the various risk factors of the firm, risks perceived by the investors and many other factors.

Risk and Return's relationship is based on the assumption that the investors must be paid higher return for higher degree of risk otherwise; they will not provide these funds. Generally, larger the proportion of long term debt in the firm's capital structure more is the financial risk due to the interest and principal repayments involved. To sustain such type of a Capital Structure a firm needs to be earnings higher operating profits, otherwise, it can be forced into cash insolvency. As the firm goes on levering itself, probability of cash insolvency and further legal insolvency keeps on increasing. This has to be compensated by the company by paying higher rate of interest. On the other hand, if the larger proportion of the capital structure is in the form of equity there are little or no fixed financial charges that a firm has to bear. But the risk perceived by the investors in such type of investment is relatively more so it will have to be compensated by a higher rate of return to them which will increase the cost of capital of the firm. So, a fine balance has to be maintained in debt and equity component to keep the cost of capital of the firm to its minimum.

Cost of Equity is generally computed using the capital asset pricing model (**CAPM**)[1] or the Arbitrage Pricing Model (**APT**)[2].

Pricing model delivers discount rate used in valuations, especially in pricing shares. CAPM delivers discount rate (RRR, required rate of return for equity holders, which is equal to the cost of equity for a company). Because all investors want to be on the CML (Capital Market Line), an asset's covariance with the market portfolio appeared to be the relevant measure of risk. This model is used to determine whether the asset is undervalued, properly valued or overvalued in our study. An asset is priced "fairly" if the market price is equal to the equilibrium price provided by CAPM. Whenever a stock is overvalued, it falls below the security market line (SML)[3]; whenever it is undervalued, it falls above the SML.

LEVERAGE

In general, the term 'leverage' refers to the responsiveness or influence of one variable over some other variable. In financial terms, leverage refers to the use of various financial instruments (Debt) to increase the potential return of an investment. Most companies use debt to finance its operations. Leverage helps both investor as well as the firm to operate. But this comes with a greater risk to both of them as leverage magnifies both gains and losses. So, with optimum utilization of the leverage a company can increase its shareholder wealth but if it fails to do so, the interest expense and credit risk can destroy the shareholder value.

[1]Capital asset pricing model (CAPM) indicates what should be expected or required rates of return (RRR) on the risky assets (which is equal to cost of equity, discounting rate used to value equity, and investment projects). It also shows how to create aggressive and conservative portfolios. It answers the question, which assets should be selected to achieve positive economic profits (value added, wealth created, goodwill, NPV).

[2]APT is a general theory of asset pricing that holds that the expected return of a financial asset can be modeled as a linear function of various macro-economic factors or theoretical market indices, where sensitivity to changes in each factor is represented by a factor-specific beta coefficient. The model-derived rate of return will then be used to price the asset correctly - the asset price should equal the expected end of period price discounted at the rate implied by the model. If the price diverges, arbitrage should bring it back into line. The theory was proposed by the economist Stephen Ross in 1976.

[3] The Security Market Line represents the relation between rate of return and risk measured by the beta coefficient. The Security Market Line reflects the risk-return combinations available for all risky assets in the capital market at a given time. Investors choose investments that are consistent with their risk preferences; some prefer only low-risk investments and others select high-risk investments.

Some of the commonly used leverages are:

Operating leverage – It establishes the relationship between Sales and EBIT.

- ***Degree of operating leverage*** - The percentage change in a firm's operating profit (EBIT) resulting from a 1 percent change in output (sales).

Financial leverage - It establishes the relationship between EPS and EBIT.

- ***Degree of financial leverage*** – the percentage change in a firm's EPS (Earning per Share) resulting from a 1 percent change in operating profit (EBIT).

Separately, operating leverage deals with the business risk [4]complexion of the firm and financial leverage deals with the financial risk[5] complexion of the firm. But a firm has to look into the overall risk (Business + Financial Risk) of the firm. Combined leverage is not a distinct type of leverage analysis; rather it is a product of the OL and FL.

- ***Degree of Combine Leverage*** - The percentage change in firm's EPS (earning per Share) resulting from a 1 percent change in Sales.

With the theoretical concepts in place, we seek to establish it practically. For our research purpose, we have chosen two sectors- Infrastructure and IT. While Infrastructure sector is debt laden, IT possess almost zero debt. Analysis of two sectors with contrasting capital structures will strengthen our research in an effort to establish concrete hypothesis.

Apart from that, we seek to find out value of a firm as per provisions of various capital structure theories and compare it to market capitalization of a firm. Thus, we intend to arrive at valuation of a firm on whether it is overvalued or undervalued.

LITERATURE REVIEW

Darren J. Kisgen (2006) in his research **"**Credit Ratings and capital structure" examined to what extent credit ratings directly affect capital structure decisions. His paper outlined discrete costs (benefits) associated with firm credit rating level differences and tests whether concerns for these costs (benefits) directly affect debt and equity financing decisions. Through the analysis on number of companies that were nearing their credit revision and leverage levels, he concluded that Firms near a credit rating upgrade or downgrade issue less debt relative to equity than firms not near a change in rating. This behavior is consistent with discrete costs (benefits) of rating changes but is not explained by traditional capital structure theories. In regressions including dummy variables that account for a firm being close to a ratings change-both near a Broad Ratings change and near a Micro Ratings change-firms near a ratings change issue approximately 1.0% less net debt relative to net equity annually as a percentage of total assets than firms not near a ratings change. The Broad Rating results are consistent with managers being concerned with ratings-triggered costs (benefits) to the firm and the effects of regulations on bond investors.

Carlos A. Molina (2005) in his research **"**Are Firms Underleveraged?" studied the effect of firm's leverage on default probabilities as represented by firm's ratings. He used firm's unobserved risk and firm's leverage as a tool to reflect their impact on firm's ratings. He then through the use of regression equations calculated the leverage on the ratings and thereby on default probabilities. He concluded that leverage's effect on ratings is 3 times stronger than it is if the endogeneity of leverage is ignored. This stronger effect results in a higher impact of leverage on the ex ante costs of financial distress, which can offset the current estimates of the tax benefits of debt.

Gershon N. Mandelker and S. Ghon Rhee (1984) in their research **"**The impact of Degrees of Operating and Financial Leverage on Systematic Risk of common stock" demonstrated how two types of leverage contribute to systematic risk of a common stock. Also they discussed interrelationships between the two. Through the study on 255 manufacturing firms between 1957-1976 they successfully concluded that the degrees of operating and financial leverage explain a large portion of the variation in beta. The conjecture that firms engage in trade-offs between DOL and DFL seems to have gained strong empirical evidence in our study. We found a significant correlation between the two types of leverage.

Martin Lally (2002), in his research "Time Varying Market Leverage, the Market Risk Premium and the Cost of Capital" strongly criticized MM approach on cost of capital propositions on two accounts: it is not a function of market leverage, and it implies, absent taxes and default risks, that an average firm's WACC varies with its own leverage. He then proposed new estimator of MRP which would overcome these problems. Furthermore the relationship between this MRP estimator and market leverage is theoretically modeled rather than statistically estimated, and hence avoids estimation problems inherent in time varying MRP estimators of the latter kind.

The Brattle Group in his research "The Effect of Debt on Cost of Equity" **,** Jan 2005 reinforced the idiom that incorporation of Debt magnifies the Cost of Equity. They used simple models to make the reader understand how use of more debt increases financial leverage and consequently Ke. They also urged the readers to use appropriate rate of returns on investments that conforms to both Kd and Ke.

Ivo Welch, Brown University, RI and NBER, in his research (2011), "Two Common Problems in Capital Structure Research: The Financial- Debt-To-Asset Ratio and Issuing Activity Versus Leverage Changes", pointed out two common problems in capital structure research. First, although it is not clear whether non-financial liabilities should be considered debt, they should never be considered as equity. Yet, the common financial-debt-to-asset ratio (FD/AT) measure of leverage commits this mistake. Thus, research on increases in FD/AT explains, at least in part, decreases in non-financial liabilities. Future research should avoid FD/AT altogether. The paper also quantified the components of the balance sheet of large publicly traded corporations and discusses the role of cash in measuring leverage ratios. The paper suggested researchers should instead use either the liabilities-to-assets ratio, or, if they want to focus on financial leverage only, the FD/CP ratio.

Second, it said that equity-issuing activity should not be viewed as equivalent to capital structure changes. Empirically, the correlation between the two is weak. The capital structure and capital issuing literature are distinct.

Alexander Kurshev and **Ilya A. Strebulaev** (2005) in their research "Firm Size and Capital Structure", have tried to establish that firm sixe is empirically strongly positively related to capital structure. A number of intuitive explanations can be put forward to account for this stylized fact, but none have been considered theoretically. This paper starts bridging this gap by investigating whether a dynamic capital structure model can explain the cross-sectional size- leverage relationship. The driving force that we consider is the presence of fixed costs of external financing that lead to infrequent restructuring and creates a wedge between small and large firms. We find four firm size effects on leverage. Small firms choose higher leverage at the moment of refinancing to compensate for less frequent rebalancing. But longer waiting times between refinancing lead on average to lower levels of leverage. Within one refinancing cycle the relationship between leverage and firm size is negative. Finally, there is a mass of firms opting for no leverage. The analysis of dynamic economy demonstrates that in cross-section the relationship between leverage and size is positive and thus fixed costs of financing contribute to the explanation of the stylized size-leverage relationship. However, the relationship changes the sign when we control for the presence of unlevered firms. The paper concludes by note reading findings provide a clear signal of the need for further research in this area, heading on from investigating other factors effecting firm size-leverage relationship.

Malcolm Baker and Jeffery Wurgler (2002), in their research "Market Timing and Capital Structure", bring out the well known that firms are more likely to issue equity when their market values are high, relative to book and past market values, and to repurchase equity when their market values are low. We document that the resulting effects on capital structure are very persistent. As a consequence, current capital structure is strongly related to historical market values. The research was carried out with a sample of companies whose IPO could be determined, and the behavior of leverage was studied during the IPO time. The results suggest the theory that capital structure is the cumulative outcome of past attempts to time the equity market.

Thorsten Hens and Sven C. Steude (2006), in their research "The Leverage Effect without Leverage: An Experimental Study", National Centre of Competence in Research Financial Valuation and Risk Management, Working Paper No. 318, June 2006, reinforce Black`s (1976) leverage effect by using Experimental stock

[3]Business Risk - The inherent uncertainty in the physical operations of the firm. Its impact is shown in the variability of the firm's operating income (EBIT).

- DOL is only one component of business risk and becomes "active" only in the presence of sales and production cost variability.
- DOL magnifies the variability of operating profits and, hence, business risk.

[5]*Financial Risk* --The added variability in earnings per share (eps) -- plus the risk of possible insolvency -- that is induced by the use of financial leverage.Debt increases the probability of cash insolvency over an all-equity-financed firm.

markets to add some evidence that Financial markets does not necessarily stem from the financial leverage of the firm. The paper presents large number of markets in which the leverage effect is observed although the underlying asset does not exhibit a financial leverage at all. The researchers used four experimental stock markets in a controlled setting to find that although the capital structure of the underlying firm never changes, a leverage effect in traded asset prices is observed. It ends on a note for further research to see if the magnitude of the leverage effect changes when an asset which exhibits different degrees of financial leverage is introduced.

Kheder Alaghi (2012), Armenian State Agrarian University, Armenia, in his research, "Operating Leverage and Systematic Risk", studied the effect of operating leverage in the systematic risk of listed companies in Tehran Stock Exchange. In this study, operating leverage (OL) as independent variable and systematic risk (β) as the dependent variable are considered. SIG ≤ 0.05 means H0 hypothesis is rejected; otherwise there is no adequate reason for rejecting H0. For testing the hypothesis of this study, linear regression technique has been used. According to the results obtained, H0 is confirmed because SIG = 0.20 > 0.05. Thus, operating leverage has no effect on the systematic risk of listed companies in Tehran Stock Exchange.

Almut E. D. Veraart , and **Luitgard A. M. Veraart (2010)**, in their research "Stochastic volatility and stochastic leverage", proposed the new concept of stochastic leverage in stochastic volatility models. Stochastic leverage refers to a stochastic process which replaces the classical constant correlation parameter between the asset return and the stochastic volatility process. We provide a systematic treatment of stochastic leverage and propose to model the stochastic leverage effect explicitly, e.g. by means of a linear transformation of a Jacobi process. Such models are both analytically tractable and allow for a direct economic interpretation. In particular, they proposed two new stochastic volatility models which allowed for a stochastic leverage effect: the generalized Heston model and the generalized Barndorff-Nielsen & Shephard model. They investigated the impact of a stochastic leverage effect in the risk neutral world by focusing on implied volatilities generated by option prices derived from their new models and also studies the influence of leverage effect and volatility feedback effect on return–volatility regressions. They found an analytically tractable asset price model which allows for an easy economic interpretation of both stochastic volatility and stochastic leverage.

Dileep R. Mehta, Edward A. Moses, Benoit Deschamps and Michael C. Walker (1980), in his research "The influence of Dividends, Growth, and Leverage on share prices in the Electric Utility Industry:" demonstrated the effect of changes in financial policy variables, viz. dividend payout, leverage & growth, with a capital market equilibrium framework. They also devised an integrative valuation model for valuation of firm within a capital market context. Dividend & leverage policies relevance has been tested on samples of 55 electric utilities & empirical estimates reveal that investors do not exhibit indifference toward dividend distribution.

Hayne E, Leland and Klaus BjerreToft (1996) in his research **"**Optimal Capital, Endogenous Bankruptcy and the term structure of Credit Spreads " develops a model of optimal leverage & risky corporate bond prices for arbitrary debt maturity. They prove that bankruptcy can occur at asset values that may either lower or higher than the principal value of debt as well as that optimal leverage depends upon debt maturity & is markedly lower when the firm is financed by short term debt. Results of this study illuminate how the twin dimensions of optimal capital structure amount & maturity, represent a tradeoff between tax advantage, bankruptcy costs and agency costs.

DATA SELECTION

For research analysis purpose, two sectors have been chosen- Infrastructure and Information Technology. From both the sectors 10 companies have been chosen. These 10 companies represent their Indices CNX Infra and CNX IT. Also, they form highest market capitalization in these sectors. Thus they can be assumed to be representative of their respective sectors.

Data relating to elements of Financial Statements is as on 31st Mar 2011 as when the research was carried out, data for FY 2012 was not available. This data has been sourced from Software ACE EQUITY.

Beta Data has been sourced from reuters.com and Market Capitalization data has been sourced from moneycontrol.com. Data relating to Market Capitalization and Beta is as on 6th Mar 2012.

Data relating to Market Risk Premium has been taken from the works of Aswath Damodaran.

DATA ANALYSIS METHODOLOGY

All the analysis with respect to Cost of Debt, Cost of Equity, WACC, Leverages and capital structure has been made in MS Excel so as to get accurate results.

Interest costs have calculated as percentage of debt, adjusted for tax. And hence Cost of Debt has been calculated.

Cost of Equity has been calculated as CAPM method.

Degree of leverage has also been calculated as per their standard formulas.

Finally, Coefficient of Correlation has been calculated between leverages and cost of both the forms of financing.

After obtaining positive correlation between Cost of equity and Financial Leverage they are regressed to obtain an equation calculating Cost of Equity through Financial Leverage.

Also, value of the firm has been calculated as per Capital structure theories and has been compared to their market capitalization. And thus, it has been determined whether they are undervalued or overvalued.

ANALYSIS

INFRASTRUCTURE WACC

	Power Grid	NTPC	NHPC	L & T	BHEL	JP Associate	Adani Power	Crompton Greaves	Bharti Airtel	R Power
Cost of Capital										
Cost of Debt										
Total Debt	43230.15	44139.26	15975.81	7161.11	163.35	21707.64	17346.06	13.40	11897.50	1554.05
Interest	2791.34	2149.08	494.13	747.52	54.73	1503.21	316.83	20.69	340.90	42.35
Interest as % of debt	6.5%	4.9%	3.1%	10.4%	33.5%	6.9%	1.8%	154.4%	2.9%	2.7%
PBT	3824.73	12049.60	2878.43	5832.91	9005.67	1754.51	823.77	927.01	8725.80	253.67
Tax	1127.84	2947.01	711.76	1945.86	2994.47	586.73	300.02	232.68	1008.90	-20.88
Tax as % of PBT	29.5%	24.5%	24.7%	33.4%	33.3%	33.4%	36.4%	25.1%	11.6%	-8.2%
Kd [Int (1-Tax Rate)]	4.6%	3.7%	2.3%	7.0%	22.4%	4.6%	1.2%	115.6%	2.5%	2.9%
Cost of Equity										
Risk Free Rate of Return	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Beta	0.66	0.7	0.66	1.52	0.85	1.95	1.4	1.16	0.68	1.58
Market Return	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Ke (CAPM)	15%	15%	15%	23%	17%	27%	22%	19%	15%	23%
Debt In Cap Structure(BV)	43,230.15	44,139.26	15,975.81	7,161.11	163.35	21,707.64	17,346.06	13.40	11,897.50	1,554.05
Equity In Cap Structure (MV)	51,274.21	143,759.67	25647.05	75,659.74	67,553.76	14,799.97	15,892.46	8,682.59	127,578.02	35,274.47
Total	94,504.36	187,898.93	41,622.86	82,820.85	67,717.11	36,507.61	33,238.52	8,695.99	139,475.52	36,828.52
Debt Weight	0.46	0.23	0.38	0.09	0.00	0.59	0.52	0.002	0.09	0.04
Equity Weight	0.54	0.77	0.62	0.91	1.00	0.41	0.48	0.998	0.91	0.96
WACC	10%	13%	10%	21%	17%	14%	11%	20%	14%	22%
Leverages										
Contribuition	7018.54	15328.71	3277.08	9121.34	12891.95	4534.39	1331.77	1486.88	26645.85	-50.23
EBIT	6,616.07	14,198.68	3,372.56	6,580.43	9,060.40	3,257.82	1,140.60	947.70	9,066.70	296.02
EBT	3,824.73	12,049.60	2,878.43	5,832.91	9,005.67	1,754.51	823.77	927.01	8,725.80	253.67
Operating Leverage	1.06	1.08	0.97	1.39	1.42	1.39	1.17	1.57	2.94	-0.17
Financial Leverage	1.73	1.18	1.17	1.13	1.01	1.86	1.38	1.02	1.04	1.17
Combined Leverage	1.84	1.27	1.14	1.56	1.43	2.58	1.62	1.60	3.05	-0.20
Corr(Kd and CL)	-0.001									
WACC & CL	-0.411									
Ke and CL	-0.101									
Kd & FL	-0.335									
WACC & FL	-0.474									
Ke & FL	0.355									

INFORMATION TECHNOLOGY WACC

	TCS	Infosys	Wipro	HCL Tech	Mphasis	Tech Mahindra	OFSS	Patni	Rolta	Hexaware
Cost of Capital										
Cost of Debt										
Total Debt	251.01	0.1	4744.10	1030.16	243.63	1806.40	**0.10**	1.20	1383.42	**0.10**
Interest	16.40	1	58.60	101.39	2.52	99.90	0.21	2.93	53.30	1.76
Int as % of debt	7%	1000%	1%	10%	1%	6%	210%	244%	4%	1760%
PBT	13366.33	11096.00	5705.50	1289.88	911.58	806.00	1,034.40	590.18	557.87	254.55
Tax	2390.35	3110.00	861.80	91.60	129.57	109.30	66.41	90.39	62.51	22.57
Tax as % of PBT	18%	28%	15%	7%	14%	14%	6%	15%	11%	9%
Kd [Int (1-Tax Rate)]	5%	720%	1%	9%	1%	5%	197%	207%	3%	1604%
Cost of Equity										
Risk Free Rate of Return	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Beta	0.66	0.56	0.86	0.89	0.98	1.22	0.87	0.86	1.37	1.17
Market Return	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Ke (CAPM)	15%	14%	17%	17%	18%	20%	17%	17%	21%	20%
Debt In Cap Structure(BV)	251.01	0.1	4744.1	1030.16	243.63	1806.4	0.1	1.2	1383.42	0.1
Equity In Cap Structure (MV)	222,144.58	162,234.13	105,267.38	34,069.13	8,782.35	8,262.57	21,938.02	7,353.34	1,511.65	3,551.46
Total	222395.59	162234.23	110011.48	35099.29	9025.98	10068.97	21938.12	7354.54	2895.07	3551.56
Debt Weight	0.00	0.00	0.04	0.03	0.03	0.18	0.00	0.00	0.48	0.00
Equity Weight	1.00	1.00	0.96	0.97	0.97	0.82	1.00	1.00	0.52	1.00
WACC	15%	14%	16%	17%	17%	17%	17%	17%	13%	20%
Leverages										
Contribuition	13773.63	14571	11114.6	3070.44	1620.79	2891.1	1224.08	837.97	1264.41	326.26
EBIT	13,381.83	11,098.00	5,764.10	1,391.27	913.39	905.90	1,034.39	593.11	611.17	256.31
EBT	13,366.33	11,096.00	5,705.50	1,289.88	911.58	806.00	1,034.40	590.18	557.87	254.55
Operating Leverage	1.03	1.31	1.93	2.21	1.77	3.19	1.18	1.41	2.07	1.27
Financial Leverage	1.00	1.00	1.01	1.08	1.00	1.12	1.00	1.00	1.10	1.01
Combined Leverage	1.03	1.31	1.95	2.38	1.78	3.59	1.18	1.42	2.27	1.28
Corr(Kd and CL)	-0.394									
WACC & CL	0.018									
Ke and CL	0.583									
Kd & FL	-0.339									
WACC & FL	-0.169									
Ke & FL	0.661									

CAPITAL STRUCTURE (INFRASTRUCTURE)

[U/V – Undervalued
O/V – Overvalued]

	TCS	Infosys	Wipro	HCL Tech	Mphasis	Tech Mahindra	OFSS	Patni	Rolta	Hexaware
Profit for Eq. Sh.holders	13,366.33	11,096.00	5,705.50	1,289.88	911.58	806.00	1,034.40	590.18	557.87	254.55
(As per approach)										
Ke	15%	14%	17%	17%	18%	20%	17%	17%	21%	20%
Value Of Equity	89466.734	79031.339	34083.0346	7583.069	5115.488	4034.034	6146.168	3525.568	2615.424	1303.379
Value Of Debt	251.01	0.1	4744.1	1030.16	243.63	1806.4	0.1	1.2	1383.42	0.1
Value of the Firm	89717.744	79031.439	38827.1346	8613.23	5359.12	5840.43	6146.27	3526.77	3998.84	1303.48
Market Capitalisation	222,144.58	162,234.13	105,267.38	34,069.13	8,782.35	8,262.57	21,938.02	7,353.34	1,511.65	3,551.46
Valuation	O/V	O/V	O/V	O/V	O/V	O/V	O/V	O/V	U/V	O/V

CAPITAL STRUCTURE (INFORMATION TECHNOLOGY)

[U/V – Undervalued
O/V – Overvalued]

	Power Grid	NTPC	NHPC	L & T	BHEL	JP Associate	Adani Power	Crompton Greaves	Bharti Airtel	R Power
Profit for Eq. Sh.holders	3,824.73	12,049.60	2,878.43	5,832.91	9,005.67	1,754.51	823.77	927.01	8,725.80	253.67
(As per approach)										
Ke	15%	15%	15%	23%	17%	27%	22%	19%	15%	23%
Value Of Equity	25600.60241	78755.5556	19266.6	25718.3	54088.11	6608.324	3813.75	4768.57	57710.317	1092.463
Value Of Debt	43,230.15	44,139.26	15,975.81	7,161.11	163.35	21,707.64	17,346.06	13.40	11,897.50	1,554.05
Value of the Firm	68830.75241	122894.816	35242.41	32879.41	54251.46	28315.96	21159.81	4781.97	69607.817	2646.513
Market Capitalisation	51,274.21	143,759.67	25,647.05	75,659.74	67,553.76	14,799.97	15,892.46	8,682.59	127,578.02	35,274.47
Valuation	U/V	O/V	U/V	O/V	O/V	U/V	U/V	O/V	O/V	O/V

REGRESSION ANALYSIS

REGRESSION BETWEEN Ke AND FL

	Ke	FL
Power Grid	15%	1.73
NTPC	15%	1.18
NHPC	15%	1.17
L & T	23%	1.13
BHEL	17%	1.01
JP Associate	27%	1.86
Adani Power	22%	1.38
Crompton Greaves	19%	1.02
Bharti Airtel	15%	1.04
R Power	23%	1.17
TCS	15%	1.00
Infosys	14%	1.00
Wipro	17%	1.01
HCL Tech	17%	1.08
Mphasis	18%	1.00
Tech Mahindra	20%	1.12
OFSS	17%	1.00
Patni	17%	1.00
Rolta	21%	1.10
Hexaware	20%	1.01

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.418603908							
R Square	0.175229231							
Adjusted R Square	0.129408633							
Standard Error	0.031743719							
Observations	20							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.003854	0.003854	3.824246	0.066221			
Residual	18	0.018138	0.001008					
Total	19	0.021992						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.11464185	0.035519	3.227646	0.00467	0.04002	0.189263907	0.04002	0.189264
Financial Leverage	0.059161978	0.030253	1.955568	0.066221	-0.0044	0.122721369	-0.0044	0.122721

CONCLUSION

IMPACT OF LEVERAGES OF A FIRM ON ITS COST OF FUNDS

INFRASTRUCTURE

Infra Firms are supposed to be heavily indebted because of major Capex plans they undertake which entail huge funds. In our Research Project we have taken infrastructure companies with highest market capitalization and as per theoretical literature, debt forms major portion of capital structure of these companies.

One of significant result our research has produced is that Leverage of a company whether Combined or Financial doesn't really impact Cost of Debt (K_d) of the company. In fact, since there is negative correlation, cost of debt appears to move in opposite direction with respect to Leverage. But since there is low negative correlation, it can't be concluded that Cost of debt moves in exactly opposite direction.

Since Debt forms major portion of capital structure of Infra Firms, correlation between overall cost of capital and Leverage has also turned negative. This holds the theoretical concept true which says that as leverage increases, weighted average cost of capital comes down during initial period.

Also one of the most significant conclusions we can arrive by our analysis is impact of leverages on cost of Equity. Positive correlation between Leverages and cost of equity suggests that K_e moves in tandem with leverages i.e. risk. As the risk of the firm increases, Equity Shareholder's demand in form of return also increases, and thus cost of equity increases. Especially correlation of 0.355 between K_e and Financial leverages suggests that as the Financial Leverage increases, equity shareholders start demanding higher rate of return than the ones which are not leveraged.

INFORMATION TECHNOLOGY

Historically, theoretically and practically non-leveraged firms, theses firms have minor debt in their capital structure. Our sample of companies also proves that. Since it was concluded from the infrastructure companies that Leverages just don't impact cost of debt (K_d), analysis on IT companies just reinforced that.

While having high equity proportion in total capital structure, positive correlation between K_e and Combined Leverage, K_e and Financial Leverage and WACC and Financial Leverage concludes that as the firms become more leveraged (i.e. risky), equity shareholder's expectations in the form of returns also achieve new heights and thus cost of equity to the firm increases.

VALUE OF FIRM AS PER CAPITAL STRUCTURE THEORIES AND DETERMINATION OF FIRM'S VALUATION WITH RESPECT TO ITS MARKET CAPITALISATION

Going by the valuations, only two firms Power Grid, NHPC, JP Associate and Adani Power appear to be undervalued in infra space but in IT Sector, only one firm Rolta is undervalued and thus makes a good buy as per capital structure theories. But because of the limitations of these theories, it should not be considered sole deciding factor for investment purposes.

REGRESSION BETWEEN COST OF EQUITY AND FINANCIAL LEVERAGE

At the significance level of 0.05, regression equation obtained cannot be considered significant as f value=0.066. Since it was carried out on 20 companies only, it failed to produce significant results marginally. Further research can be carried out in this respect such that to calculate Cost of Equity through Financial Leverage.

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